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SEA TURTLE BIOLOGY AND CONSERVATION**

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Compilers:

**Thelma H. Richardson
James I. Richardson
Marydele Donnelly**

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**U.S. DEPARTMENT OF COMMERCE
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**NATIONAL MARINE FISHERIES SERVICE
William W. Fox, Jr., Assistant Administrator for Fisheries**

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SEA TURTLE SIGHTING SIGNS ON THE TEXAS GULF COAST

Jo A. Williams

Sharon A. Manzella

National Marine Fisheries Service, Galveston Laboratory, 4700 Avenue U, Galveston, TX 77551-5997 USA

INTRODUCTION

The National Marine Fisheries Service (NMFS) Galveston Laboratory maintains a data file of sea turtle sightings. A sighting is described as an event in which a sea turtle is seen, usually swimming at the surface. Sightings are reported by divers, oil companies who are cooperating with the Lab, NMFS observers on oil rig removals and salvage operations, boat operators, fishermen, and the general public. Reports have indicated that sea turtles are frequently seen in association with jetties that occur along the Texas Gulf Coast. Because the same people frequently utilize the jetties, the general public can be a valuable source of information. Through public reports, data on the frequency, species, and size classes of sea turtle sightings associated with the jetties can be collected by NMFS with a minimum investment of funds, time, and personnel.

In order to encourage public participation, "sea turtle sighting signs" were placed at the north and south Fish Pass jetties in Mustang Island State Park near Port Aransas in the summer of 1989 and at the north jetty of the Brazos Santiago Pass on South Padre Island in the fall of 1989. Data collected from these two sights is summarized.

MATERIALS AND METHODS

The sighting signs contain descriptions and colored illustrations of the five species of sea turtles that occur in the Gulf of Mexico and explain that turtles are often seen near the jetties. Also attached to each sign is a box holding sighting cards to be filled out and a box for the deposition of completed cards. Data are collected on the date and time of sighting, species, color, carapace length and shape, and location of the turtle in respect to the jetties.

The Fish Pass jetties consist of two rock (granite) groins extending approximately 92 meters southeastward into the Gulf of Mexico at a distance of approximately 92 meters apart. Constructed in 1972, the Fish Pass once connected the Gulf with Corpus Christi Bay, but gradually filled in over time. Located within Mustang Island State Park, the jetties are highly utilized by fishermen, surfers, and beach goers. Signs were erected at both the north and south jetties on 28 June 1989. Texas Parks and Wildlife Department personnel monitor the boxes, retrieve any completed cards and forward them to the NMFS Galveston Lab on a regular basis.

Constructed in the mid-1930s, the Brazos Santiago Pass jetties extend eastward into the Gulf of Mexico for approximately 1.5 km and border a channel that is 92 m wide and 12 m deep leading into the lower Laguna Madre. The ports of Brownsville and Port Isabel and the Intracoastal Waterway are accessed through this pass. The north jetty is located within Isla Blanca Park and is frequented by beach goers and fishermen. A sighting sign was placed at the north jetty on 9 November 1989. A sign was not placed at the south jetty, located on Brazos Island, due to logistical problems associated with the collection of completed cards. The sign at Brazos Santiago Pass is maintained by a NMFS Sea Turtle Stranding and Salvage Network employee. Respondents from both data collection sights are sent a packet of sea turtle information and a letter of acknowledgment for their assistance.

RESULTS AND DISCUSSION

As of 1 January 1990, 80 sightings have been reported from the Fish Pass jetties and 13 sightings from the Brazos Santiago Pass north jetty. Three additional reports were also received for areas not associated with the jetties. The number of turtles sighted from each jetty and the orientation of the turtle in respect to the jetties is

shown in Figure 1. At the Fish Pass jetties, the largest percentage of turtles was seen at the north side of the north jetty, an area relatively protected from the prevailing wind-driven waves. This may not necessarily reflect a preference by the turtles for this area, but rather the possibility of sighting a turtle may be increased by the calmer waters. Relatively few turtles were seen in the area between the jetties at Fish Pass, while over 69% of the sightings at the Brazos Santiago Pass were reported from this area. As with all data presented, any variation in the location and times of sightings may not reflect actual turtle occurrences, but rather different degrees of utilization of the jetties by the public. For example, sightings were only reported for daylight hours in which the turtles would be more visible and the public would most likely be present at the jetties.

Monthly variation (Figure 2) in the number of sightings reflects the co-occurrence of turtles and the people who report them. Attendance at Mustang Island State Park in 1989 dropped from approximately 100,000 people in July to less than 14,000 in December. The low number of sightings in June at the Fish Pass jetties and in October at Brazos Santiago is due to the reporting of a few sightings prior to the installation of the signs.

Species determination (Figure 3) may be difficult due to both inexperience by the observer and short surfacing times by the turtle. The data from the sighting cards suggests that sightings are equally distributed among four species: *C. mydas*, *E. imbricata*, *C. caretta*, and *L. kemp*i. At this time the species identification cannot be verified, but observations by NMFS personnel indicate that the majority of turtles sighted are juvenile *C. mydas*. As a number of the sightings are reported by the same people, perhaps further education of these individuals will increase the reliability of their observations. Data is also collected on color and carapace shape in order to aid in the identification of the species. Estimated carapace lengths (Figure 4) indicate that most of the turtles are of a juvenile to subadult size.

The response to the signs has been positive; all respondents have indicated a great deal of interest and only one "prank" card and one negative response have been received. One response reported the sighting of a 3000 centimeter pink turtle; the other informed us that we didn't know what was going on, and if we really wanted to learn anything about sea turtles we should talk to a shrimper. Initially, plans were to capture and paint-mark the carapace of turtles found at the jetties in order to determine if the same turtles are present at the jetties over a long period of time or if there is a constant turnover of individuals; however, this was prevented due to weather conditions. Paint-marking of the turtles could aid in the positive identification of the species. Meanwhile, the sighting signs and cards have served quite well to educate the public and to collect data with a minimum of resources.

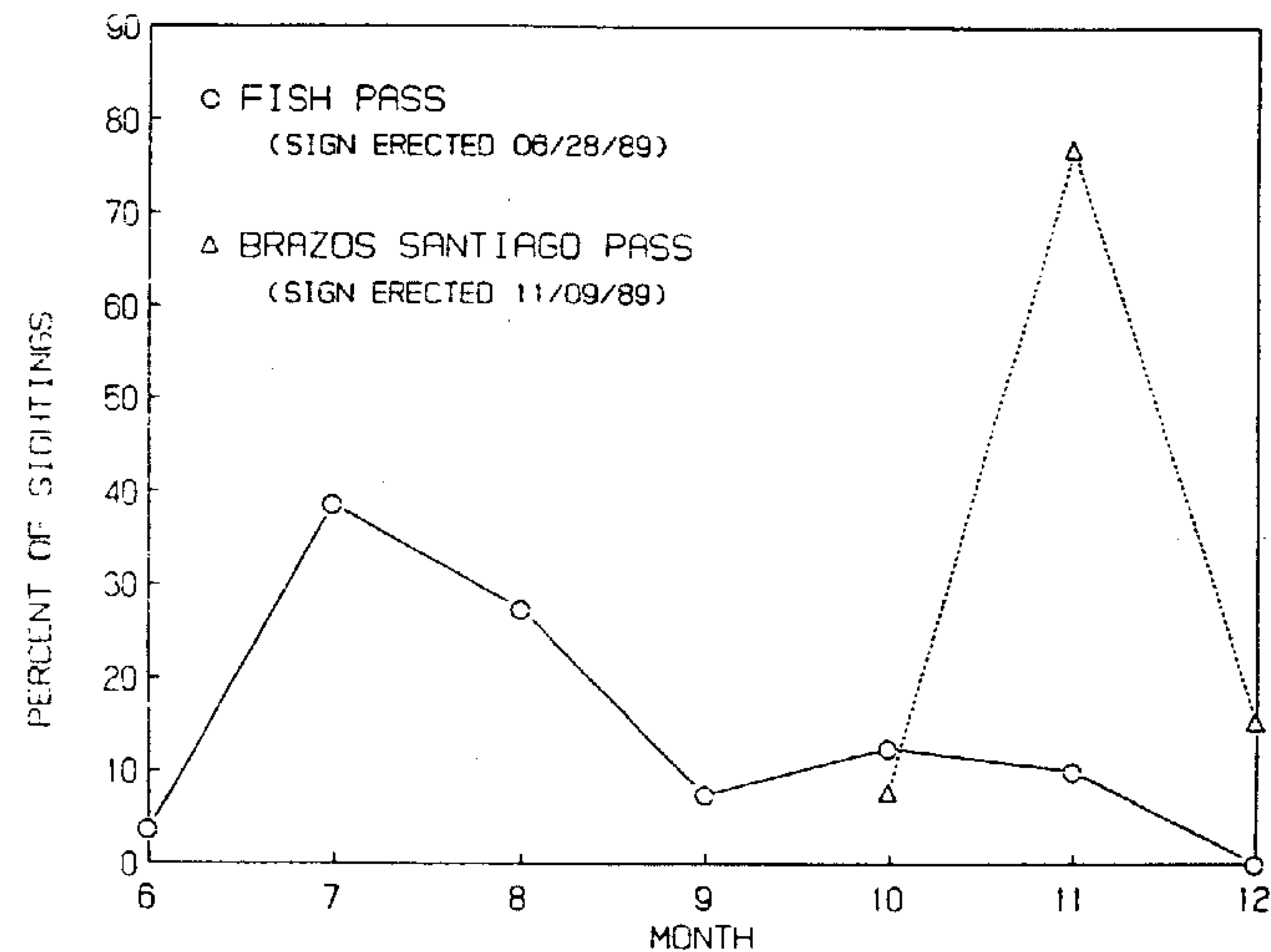
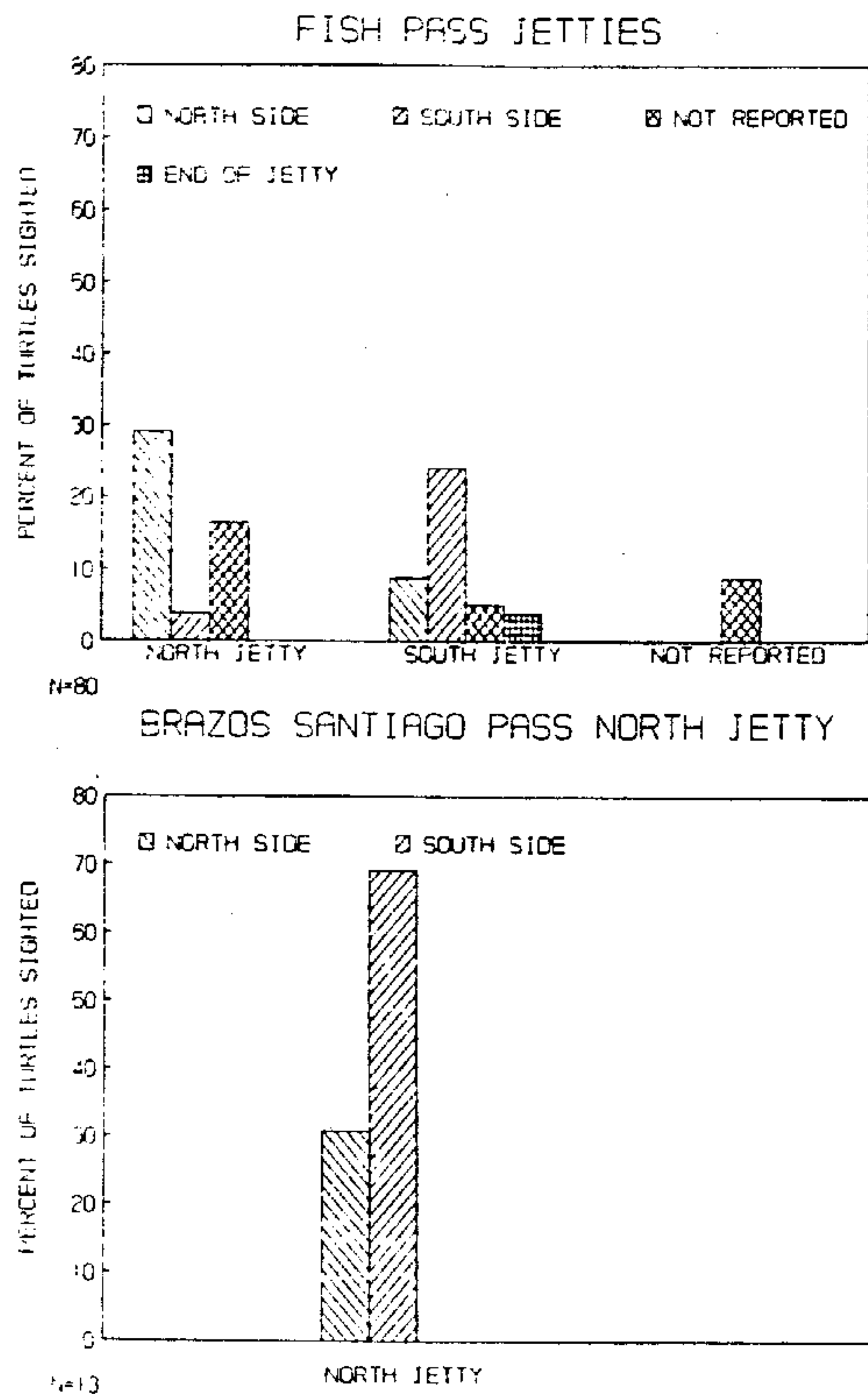


Figure 2. Sea turtle sightings reported by month at Fish Pass and Brazos Santiago Pass in 1989.

Figure 1. Location of sea turtle sightings in respect to the jetties at Fish Pass and Brazos Santiago Pass.

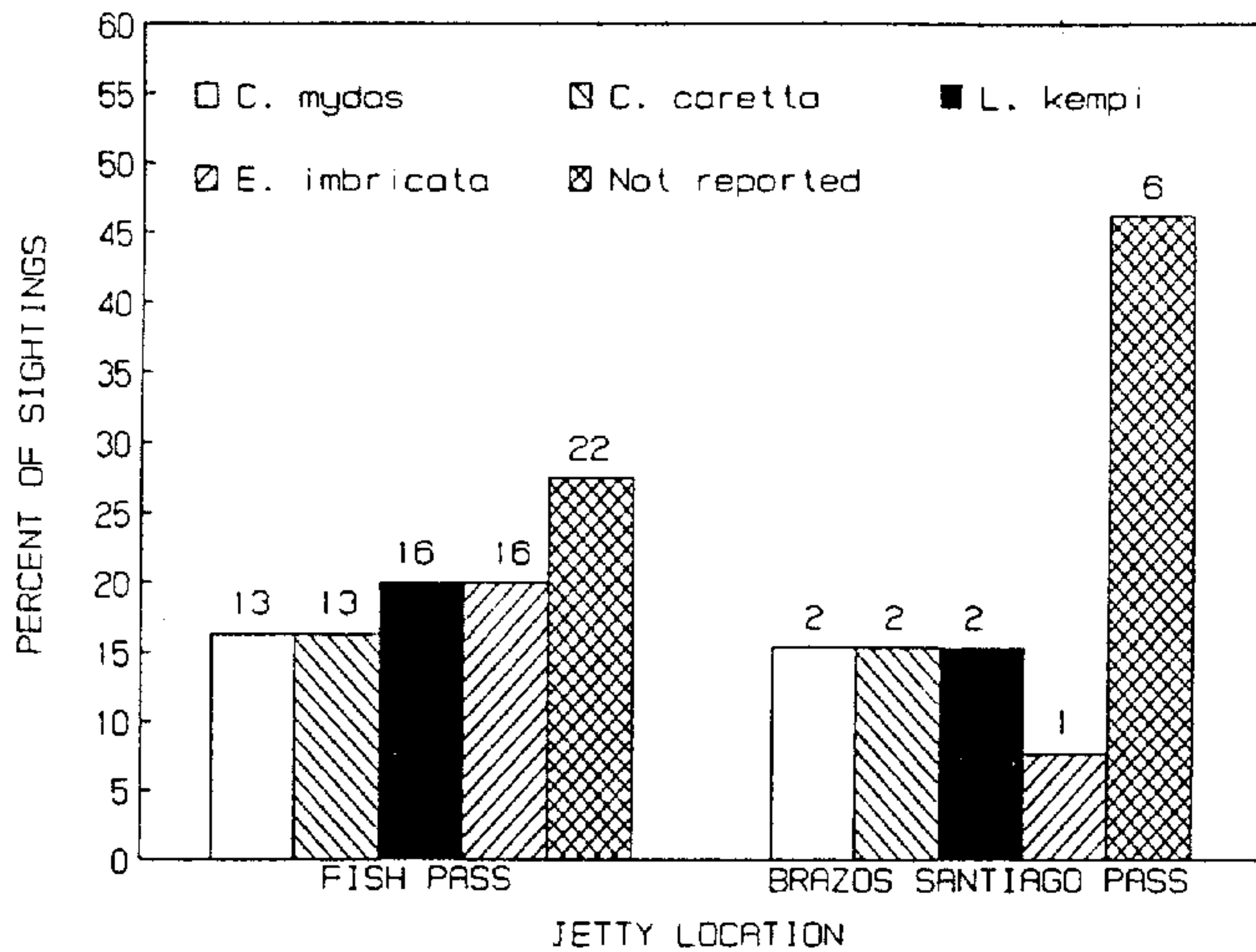


Figure 3. Species composition of sea turtle sightings reported by the public at Fish Pass and Brazos Santiago Pass jetties. Figures at top of vertical bars represent actual number of sightings for each species.

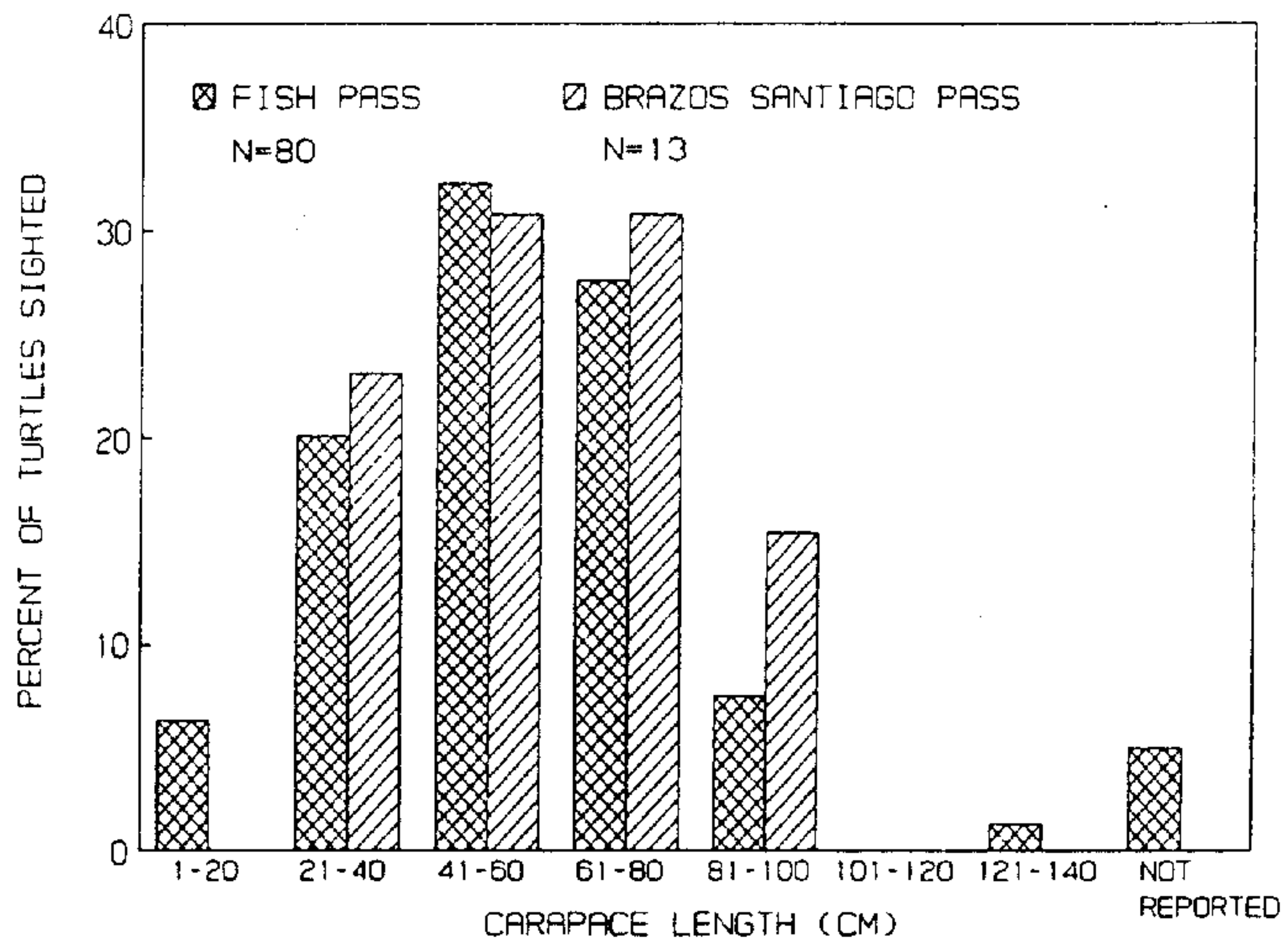


Figure 4. Estimated carapace lengths of sea turtles sighted by the public at Fish Pass and Brazos Santiago Pass.